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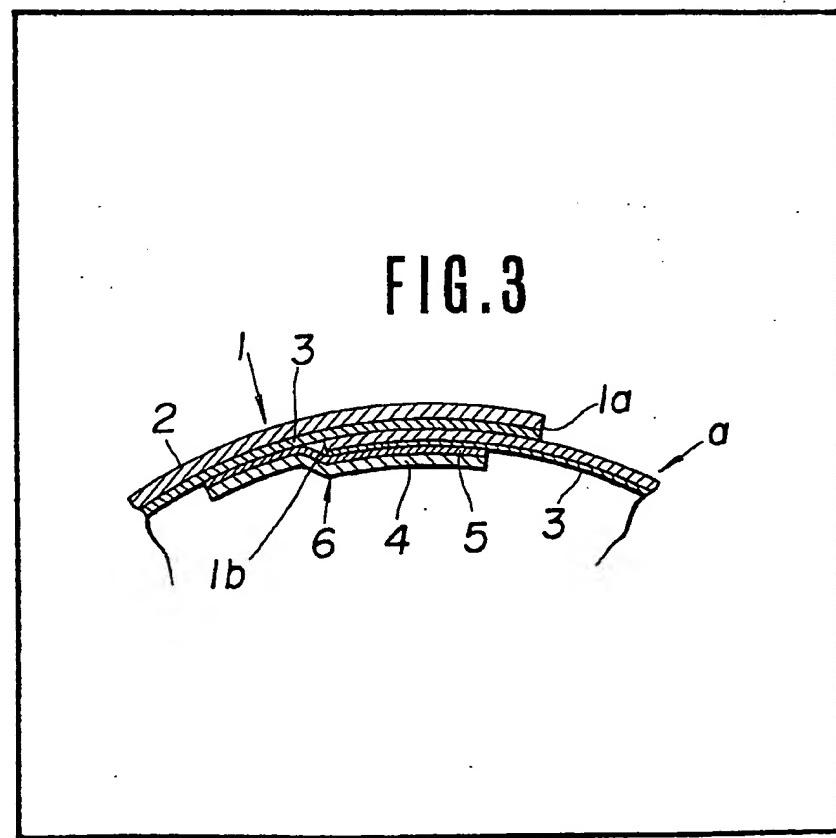
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**(54) Packaging foodstuffs**

(57) In a package for ham, sausage or similar food products, a casing (1) comprising a heat-sealable plastics film (3) laminated onto the inner surface of shrink nylon film (2) is

curved into a cylindrical form so that two edges (1a, 1b) thereof overlap each other, and the inside of this overlapped portion is covered with a tape (6) made of the same laminate as that of the casing film (3). This tape is heat sealed onto the casing film to form an integral back patch (6).



**GB 2 126 191 A**

1/2

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FIG.1

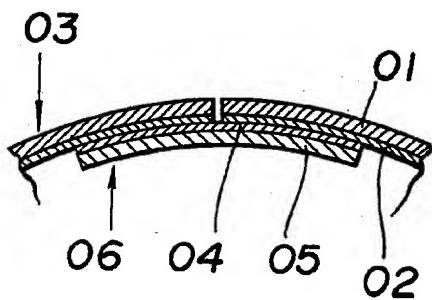
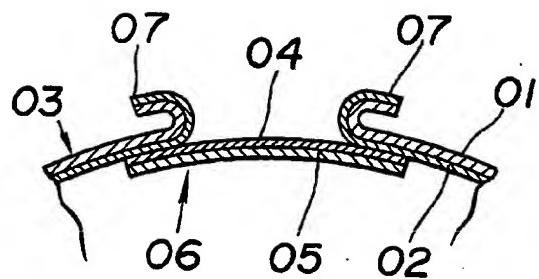


FIG.2



2/2

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FIG.3

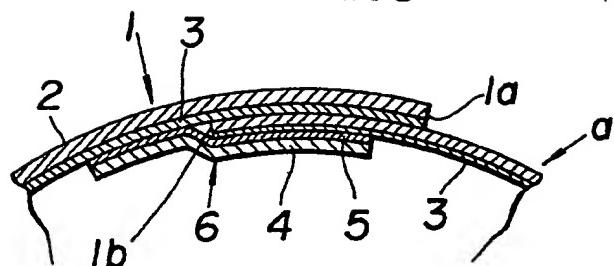


FIG.4

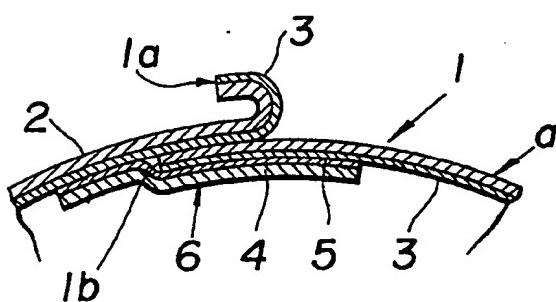
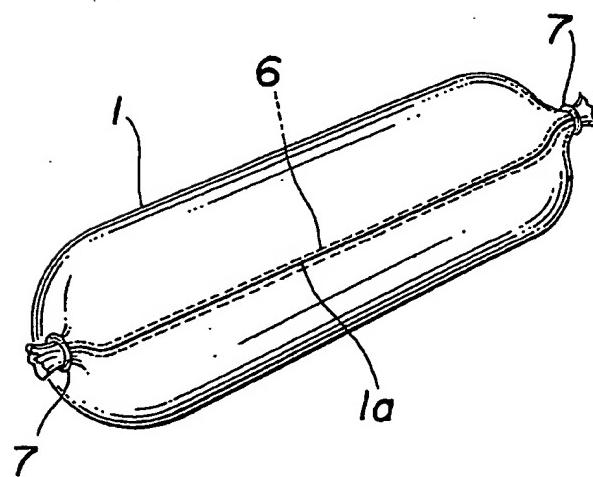


FIG.5



**SPECIFICATION**  
**Packaging foodstuffs**

This invention relates to the packaging of foodstuffs. In this packaging of foodstuffs such as 5 ham, sausage, ground fish, meat or similar food products, casings of plastics materials are known which are packed with such food and heated (boiled) so that the casing is heat shrunk into a creaseless, stretched state tightly enclosing the 10 food product.

Figure 1 of the accompanying drawings illustrates a known casing made of shrink nylon and having a back patch. In this known structure, a casing film 03 formed from a shrink nylon film 15 01 and a heat seal layer (polyethylene layer) 02 laminated onto the inner surface of the nylon film is curved to bring both edges thereof into butt contact, and adhesive tape 06 formed from a shrink nylon film 05 and a heat seal layer (polyethylene layer) 04 laminated onto the inner surface (bonded side) of the nylon film is applied to the inside of the butt-joint area of the casing film 03 and is heat sealed to said casing film 03 to make a cylindrical casing.

25 In this known structure, when the casing is used as a commercial article by packing meat or a similar foodstuff therein, closing both open ends of the casing by a clip or other fastening means, heat sterilising the pack by boiling and then 30 cooling it, the butt-joined edges of the casing film 03 tend to curl outward as shown in Figure 2 of the accompanying drawings due to differences in the heat shrinkage characteristics between the nylon film 01 and the heat seal layer 02.

35 Too much curling weakens the bonding strength of this joint because the bonded area of the adhesive tape 06 is reduced, resulting in breakage of the pack. A solution to this problem is to use a wider adhesive tape 06 to provide an 40 enlarged bonded area between the adhesive tape 06 and the casing film 01, but such an enlargement of the bonded area is impractical for a commercial product as it necessitates a large volume of adhesive tape and also requires more 45 expensive heat sealing.

Further, projecting film edges such as those shown in Figure 2 make the external appearance of the product unsightly to reduce its commercial value.

50 A primary object of this invention is to eliminate this problem.

In accordance with one aspect of the present invention there is provided a method of packaging a food product, such as ham or sausage, in a

55 casing of a heat shrinkable plastics material lined internally with a heat seal layer of plastics material, wherein opposite edges of the casing are brought into overlapping relation and a back patch of similar construction to the casing is 60 applied to the interior of the casing to bridge the overlapped edges with the heat seal layer of the back patch in contact with both said edges before the packed food product is subjected to heat

treatment to sterilise and/or shrink wrap the 65 same.

In accordance with another aspect of the present invention there is provided a food product, such as ham or sausage, packaged in a casing of a heat shrinkable plastics material lined 70 internally with a heat seal layer of plastics material, wherein opposite edges of the casing are in overlapping relation and a back patch of similar construction to the casing is interposed between the food product and the overlapped 75 edges of the casing with the heat seal layer of the back patch fused by heat treatment to both of the overlapped edges of the casing.

The heat seal layer of the casing and of the back patch is preferably a polyethylene film.

80 A preferred embodiment of the present invention will now be described with reference to the accompanying drawings, in which:

Figure 1 is a sectional elevation of the joint area of a known ham packaging casing in which 85 the two edges of the casing film are brought into abutment and adhesive tape is bonded to the inside of the casing across the edges of the casing to secure them in position,

Figure 2 is a view similar to Figure 1 showing 90 the curled condition of the edges of the casing over the back patch after heat sterilisation of the assembly of Figure 1,

Figure 3 is a sectional view of a casing in accordance with the present invention showing 95 the condition of the back patch area of the casing in which the two edges of the casing are overlapped and adhesive tape is applied to the inside thereof to secure the edges together,

Figure 4 is a view similar to Figure 3 showing 100 the condition of the casing of Figure 3 after heat sterilisation, and

Figure 5 is a perspective view on a smaller scale of a ham packed in a casing according to this invention.

105 The present invention provides a back patch for a casing for packaging ham, sausage or the like, the back patch being capable of retaining a desired bonding strength even after heat sterilisation. According to this invention, the two edges of a casing film made of shrink nylon with a heat seal layer (for example a polyethylene layer) on the inside thereof are brought toward each other and placed one over the other (overlapped) to form a cylindrical film, and then

110 adhesive tape, which also has a heat seal layer on its bonding side, is applied to the inside of the overlapped edges of the casing film and is heat sealed thereto to join the edges of the casing film securely.

115 According to this back patch arrangement, when the adhesive tape is heat sealed, the overlapping edges of the casing film are also bonded together because the heat seal layer on the inside of the upper overlapping casing film edge is fused and bonded to the adjacent surface of the nylon film. Accordingly, no curling of the joined and bonded film edges takes place during the process until the heat sterilisation treatment.

When the casing film shrinks after heat sterilisation, the upper film edge will peel off and curl. This curling may extend over the entire width of the overlapped film edges when this portion is small in area. This curling occurs due to the difference in heat shrinkage characteristics between the shrink nylon film and the heat seal layer, so that if the width of the overlapped area is designed to make allowance for this difference, it is possible to prevent such curling occurring over the whole width of the overlapped area.

As described above, the overlapped edges of the casing film are joined together by adhesive tape applied to the inside thereof so that curling is allowed to take place only at the overlapped portion of the film but is prevented from occurring in the heat sealed area between the adhesive tape and the casing film, so that the strength of this back patch section of the film is unchanged after the heat treatment for sterilisation. Thus, it is a salient feature of this invention that curling caused by sterilisation heating is allowed to take place only at the overlapped part of the casing film but is prevented from occurring beyond the width of the adhesive tape (back patch) as described above to prevent any reduction in strength of the back patch area of the casing.

Figure 3 illustrates the above embodiment of this invention. In the drawing, numeral 1 indicates a casing film of shrink nylon film 2 with a polyethylene film 3 laminated onto the inner surface of the nylon film. Two edges 1a and 1b of the casing film 1 are brought toward each other and placed one (1a) over the other (1b) to form a film cylinder.

Numeral 6 refers to adhesive tape composed of shrink nylon film 4 with polyethylene film 5 laminated onto the inner surface thereof. This adhesive tape 6 is thus the same in material and structure as the casing film 1. The adhesive tape 6 is applied to the inside of the overlapped edges of the casing film 1, thus covering the casing film edge 1b on the inside, and is heat sealed to joint the two overlapped film edges 1a and 1b. In this heat sealing operation, the laminated film is pressed from both the outside of the adhesive tape 6 and the outside of the casing film 1 by heated bars, inducing not only fusion of the polyethylene 3 of the casing film 1 and the polyethylene 5 of the adhesive tape 6 but also simultaneous melting of the polyethylene 3 on the inner surface of the casing film end 1a overlying the other edge 1b, causing the melted polyethylene 3 to bond, if not so strongly, to the adjacent surface of the nylon film 2.

When using the casing made of shrink nylon having the above structure according to this invention, meat or other food is packed into the

casing, both ends thereof are closed hermetically with clips or other means 7 as shown in Figure 5, and then the whole pack is subjected to heat sterilisation. The pack is heated again for a short period of time to remove the creases formed on the film surface by the sterilisation heating, and is offered as a commercial product.

In the heat sterilisation step, a difference in heat shrinkage between the shrink nylon 2 and the polyethylene 3 is produced by heating and moisture absorption, causing curling of the upper film edge 1a outwardly of the casing, but the back patch portion of the casing film 1 remains bonded securely due to the adhesive tape 6 bonded onto the inside thereof. Therefore, there is no likelihood that the casing weakens and breaks in its back patch area.

It is also of significance that curling only occurs at the upper film edge 1a, that is, only one curled strip is produced on the casing, which can halve the spoiling of the external appearance caused by the formation of two curled strips on known casings.

#### Claims

1. A method of packaging a food product, such as ham or sausage, in a casing with a heat shrinkable plastics material lined internally with a heat seal layer of plastics material, wherein opposite edges of the casing are brought into overlapping relation and a back patch of similar construction to the casing is applied to the interior of the casing to bridge the overlapped edges with the heat seal layer of the back patch in contact with both said edges before the packed food product is subjected to heat treatment to sterilise and/or shrink wrap the same.
2. A method as claimed in claim 1, wherein the heat seal layer of the casing and of the back patch is a polyethylene film.
3. A food product, such as ham or sausage, packaged in a casing of a heat shrinkable plastics material lined internally with a heat seal layer of plastics material, wherein opposite edges of the casing are in overlapping relation and a back patch of similar construction to the casing is interposed between the food product and the overlapped edges of the casing with the heat seal layer of the back patch fused by heat treatment to both of the overlapped edges of the casing.
4. A packaged food product as claimed in claim 3, wherein the heat seal layer of the casing and of the back patch is a polyethylene film.
5. A method of packaging a food product and a packaged food product substantially as described in the Description with reference to and as shown in Figures 3—5 of the accompanying drawings.

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